

# VUV Fluorescence Spectrometry at Heavy-Ion Storage Rings

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The collision of highly charged, heavy ions with atomic or molecular gas targets or free electrons causes a variety of reactions such as electronic excitation, ionization, radiative electron capture and, in the case of molecules, dissociation. These processes have an important role in Astrophysics, with solar wind as a source for highly charged ions that interact with cometary or atmospheric gases. Typically, these processes are followed by the emission of one or more fluorescence photons in the spectral range from visible light (VIS) to vacuum-ultraviolet radiation (VUV). A Seya-Namioka type spectrometer for the dispersion and detection of this fluorescence in the wavelength range between 35 nm and 180 nm for experiments at gas- and electron targets and electron coolers at the FAIR facility will be set up with the aim to investigate the state of the targets after interaction and also as an online tool for ion beam monitoring.

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